



8011-01

## SECURITIES AND EXCHANGE COMMISSION

[Release No. 34-84457; File No. SR-ICC-2018-008]

Self-Regulatory Organizations; ICE Clear Credit LLC; Notice of Filing of Amendment No.1 and Order Granting Accelerated Approval of Proposed Rule Change, as Modified by Amendment No. 1, Relating to ICC's Risk Management Model Description Document and ICC's Risk Management Framework

October 19, 2018

On July 5, 2018, ICE Clear Credit LLC ("ICC") filed with the Securities and Exchange Commission ("Commission") a proposed rule change to transition from a stress-based methodology to a Monte Carlo-based methodology for the spread-response and recovery-rate-sensitivity-response components of the initial margin model (SR-ICC-2018-008), pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 ("Act")<sup>1</sup> and Rule 19b-4 thereunder.<sup>2</sup> The proposed rule change was published for comment in the Federal Register on July 24, 2018.<sup>3</sup> On September 5, 2018, the Commission designated a longer period within which to approve the proposed rule change, disapprove the proposed rule change, or institute proceedings to determine whether to approve or disapprove the

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<sup>1</sup> 15 U.S.C. 78s(b)(1).

<sup>2</sup> 17 CFR 240.19b-4.

<sup>3</sup> Securities Exchange Act Release No. 83662 (July 18, 2018), 83 FR 35033 (July 24, 2018) (SR-ICC-2018-008) ("Notice").

proposed rule change.<sup>4</sup> The Commission did not receive any comments on the Proposed Rule Change. On October 12, 2018, ICC filed Amendment No 1 to the proposed rule change.<sup>5</sup> The Commission is publishing this notice to solicit comment on Amendment No. 1 from interested persons and is approving the proposed rule change, as modified by Amendment No. 1 (hereinafter, “Proposed Rule Change”) on an accelerated basis.<sup>6</sup>

I. Description of the Proposed Rule Change

ICC’s current approach uses a stress-based approach for the spread-response and recovery-rate (“RR”) sensitivity-response components of the initial margin model. Specifically, to derive the spread-response component, the current approach considers a set of hypothetical “tightening” and “widening” credit-spread scenarios from which it computes instrument Profit/Loss (“P/L”) responses for every Risk Factor (“RF”) scenario.<sup>7</sup> All instrument P/L responses for a scenario are aggregated to obtain the portfolio P/L response for that scenario.<sup>8</sup> Because the set of scenarios does not reflect the joint distribution of the considered RFs, offsets between P/Ls are applied to provide some

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<sup>4</sup> Securities Exchange Act Release No. 84032 (September 5, 2018), 83 FR 46000 (September 11, 2018) (SR-ICC-2018-008).

<sup>5</sup> In Amendment No. 1 to the proposed rule change, ICC provided additional details and analyses surrounding the proposed rule change in the form of a confidential Exhibit 3.

<sup>6</sup> Capitalized terms used herein but not otherwise defined have the meaning set forth in the ICE Clear Europe Clearing Rules, which is available at [https://www.theice.com/publicdocs/clear\\_europe/rulebooks/rules/Clearing\\_Rules.pdf](https://www.theice.com/publicdocs/clear_europe/rulebooks/rules/Clearing_Rules.pdf).

<sup>7</sup> Id.

<sup>8</sup> Id.

portfolio benefits.<sup>9</sup> To derive the RR sensitivity-response component, all instruments belonging to a RF or Risk Sub-Factor (“RSF”) are subjected to RR stress scenarios to obtain the resulting P/L responses, and the worst-scenario response is chosen for the estimation of the RF/RSF RR sensitivity-response component.<sup>10</sup>

ICC’s current stress-based approach generates a limited number of stress scenarios that may not capture the risk of portfolios with more complex, non-linear instruments.<sup>11</sup> Additionally, the current approach does not provide for a consistent estimation of the portfolio-level spread response based on a defined risk measure (e.g., Value-at-Risk (“VaR”)) and quantile (e.g., 99%).<sup>12</sup> To alleviate the problem, the Proposed Rule Change would revise ICC’s Risk Management Model Description Document and its Risk Management Framework to a Monte Carlo-based methodology for the spread-response and recovery-rate-sensitivity-response (“RR”) components of ICC’s initial margin model.

The proposed Monte Carlo-based methodology would utilize standard tools in modeling dependence, which can be seen as a means for constructing multivariate distributions with different univariate distributions and with desired dependence structures, to generate the spread and RR scenarios.<sup>13</sup> It also would provide flexibility in modeling tail dependence, an important concept in risk management that provides

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<sup>9</sup> Id.

<sup>10</sup> Id.

<sup>11</sup> Notice, 83 FR at 35033.

<sup>12</sup> Id.

<sup>13</sup> Id.

information about how frequently extreme values are expected to occur, and that ICC considers particularly suitable for implementing its Monte Carlo framework.<sup>14</sup>

Specifically, under the Monte Carlo approach, the “integrated spread response” component would replace the spread-response and RR-sensitivity-response components.<sup>15</sup> This component would be computed by creating P/L distributions from a set of jointly-simulated hypothetical (forward looking) spread and RR scenarios.<sup>16</sup> ICC would not change the univariate RF distribution assumptions under the proposed Monte Carlo-based methodology.<sup>17</sup> ICC would utilize the simulated scenarios to derive the hypothetical spread and RR levels at which each instrument is repriced in order to generate a scenario instrument P/L based on post-index-decomposition positions.<sup>18</sup> ICC would create P/L distributions from the set of jointly-simulated hypothetical (forward looking) credit spread and RR scenarios to compute the integrated spread-response component.<sup>19</sup> The P/L distributions for each instrument would allow ICC to decompose portfolio level P/L at the RF level and to estimate RF-level risk measures.<sup>20</sup> The proposed model would utilize the 5-day 99.5% VaR measure and allow ICC to be

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<sup>14</sup> Id.

<sup>15</sup> Id.

<sup>16</sup> Id.

<sup>17</sup> Notice, 83 FR at 35033–34.

<sup>18</sup> Notice, 83 FR at 35034.

<sup>19</sup> Id.

<sup>20</sup> Id.

compliant with the European Market Infrastructure Regulation (“EMIR”) as applied to Over-The-Counter instruments.<sup>21</sup>

***Revisions to the ‘Initial Margin Methodology’ Section of the Risk Management Model Description Document***

ICC proposes revisions to the ‘Initial Margin Methodology’ section of the Risk Management Model Description Document to reflect its transition to a Monte Carlo-based methodology for the spread-response and RR-sensitivity-response components.<sup>22</sup>

ICC also proposes to clarify its initial margin model to note that it features stress loss considerations and a P/L distribution analysis at selected quantile levels that are 99% or higher.<sup>23</sup> The proposed changes would further include a description of each of the initial margin model components, which would be separated into statistically calibrated components and stress-based add-on components.<sup>24</sup> The statistically calibrated components (i.e., spread and RR dynamics, interest rate dynamics, and index/single-name (“SN”) basis dynamics) would reflect fluctuations in market observed or implied quantities, and their direct P/L impacts.<sup>25</sup> The stress-based add-on components (i.e., idiosyncratic loss given default (“LGD”), wrong-way-risk (“WWR”) LGD, bid/offer

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<sup>21</sup> Id.

<sup>22</sup> Id.

<sup>23</sup> Id.

<sup>24</sup> Id.

<sup>25</sup> Id.

width risk, and concentration risk) would reflect the risk associated with low probability events with limited information sets.<sup>26</sup>

First, ICC proposes certain minor updates to terminology in the ‘LGD Risk Analysis’ section consistent with the transition to the Monte Carlo approach.<sup>27</sup> Specifically, the proposed revisions would clarify that the LGD calculation considers RSF-specific RR level scenarios and that the Jump-To-Default (“JTD”) RR stress levels would be updated if needed. ICC proposes to update the Profit/Loss-Given-Default (“P/LGD”) calculation at the RSF level to indicate the association between the JTD and the RR level scenarios.<sup>28</sup> ICC proposes to remove a reference to the stress levels noted in the current ‘RR Sensitivity Risk Analysis’ section. ICC proposes to move the RF level P/LGD calculation ahead of the Risk Factor Group (“RFG”) LGD calculations to avoid disrupting the grouping of RFG LGD calculations.<sup>29</sup>

Second, ICC proposes amendments to the ‘JTD Risk Analysis’ section.<sup>30</sup> The proposed revisions to the Uncollateralized LGD (“ULGD”) calculation would incorporate the integrated spread-response component described above and remove reference to the current RR-sensitivity-response component.<sup>31</sup> ICC also proposes, for clarity, to shorten a

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<sup>26</sup> Id.

<sup>27</sup> ICC also proposes to reorganize the ‘Initial Margin Methodology’ section to begin with the ‘LGD Risk Analysis’ section. Id.

<sup>28</sup> Id.

<sup>29</sup> Id.

<sup>30</sup> Id.

<sup>31</sup> Id.

description in the WWR JTD calculation and to move details regarding the Kendall tau rank-order correlation to follow the WWR JTD calculation as such details are associated with the WWR JTD calculation.<sup>32</sup> ICC proposes to include this information, which is currently located in a source in a footnote, within the text to provide further description of the source in the footnote.<sup>33</sup> ICC also proposes minor structural updates to its description of specific WWR (“SWWR”) to enhance readability.<sup>34</sup>

Third, ICC proposes to add clarifying language to the ‘Interest Rate Sensitivity Risk Analysis’ section to note that the interest rate sensitivity component is a statistically calibrated initial margin component.<sup>35</sup> ICC also proposes to correct a notation to reflect an inverse distribution function.<sup>36</sup>

Fourth, ICC proposes a number of structural changes to the ‘Basis Risk Analysis’ section, which consist of moving certain descriptions within the section and making changes to conform such descriptions to the proposed new Monte Carlo based approach. Specifically, ICC proposes moving the description in the current ‘Long-Short Benefits among RFs with Common Basis’ subsection to the proposed ‘Index Decomposition and Long-Short Offsets’ subsection and making conforming changes.<sup>37</sup> Similarly, ICC

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<sup>32</sup> Id. The details regarding the Kendall tau rank-order correlation would remain unchanged, except for the addition of clarifying language referencing regulatory guidance with respect to RFs deemed highly correlated. Id.

<sup>33</sup> Id.

<sup>34</sup> Id.

<sup>35</sup> Id.

<sup>36</sup> Id.

<sup>37</sup> Id.

proposes moving the description in the current ‘Portfolio Benefits Hierarchy Summary’ subsection to the proposed ‘Long/Short Offset Hierarchy’ subsection and making conforming changes.<sup>38</sup> ICC also proposes moving the analysis in the current ‘Basis Risk Analysis’ section to the proposed ‘Index-Basis Risk Estimation’ subsection and making conforming changes.<sup>39</sup>

Fifth, ICC proposes to combine the current ‘Spread Risk Analysis’ and ‘RR Sensitivity Risk Analysis’ sections into the proposed ‘Spread and RR Risk Analysis’ section to reflect the transition to a Monte Carlo-based methodology for the spread-response and RR-sensitivity-response components.<sup>40</sup> Under the proposed approach, ICC would utilize credit spreads and RR distributions to jointly simulate scenarios to estimate portfolio risk measures.<sup>41</sup> Accordingly, ICC proposes to combine the ‘Spread Risk Analysis’ and ‘RR Sensitivity Risk Analysis’ sections into the ‘Spread and RR Risk Analysis’ section given their interrelation under the proposed approach, in which the integrated spread response would be computed by creating P/L distributions from a set of jointly-simulated hypothetical (forward looking) spread and RR scenarios.<sup>42</sup>

In the amended ‘Spread Risk Analysis’ section, ICC proposes to remove details regarding the current stress-based approach and to describe how ICC generates credit

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<sup>38</sup> Id.

<sup>39</sup> Id.

<sup>40</sup> Id.

<sup>41</sup> Id.

<sup>42</sup> Id.



spread scenarios using Monte Carlo techniques.<sup>43</sup> As described above, the spread-response component is derived in terms of a set of hypothetical “tightening” and “widening” credit spread scenarios under the current stress-based approach.<sup>44</sup> The analysis of the univariate characteristics of credit spread log-returns to arrive at credit spread scenarios would not change under the Monte Carlo-based methodology.<sup>45</sup>

The univariate RF distribution assumptions would not change under the Monte Carlo-based methodology, and thus the ‘Distribution of the Credit Spreads’ subsection of the amended ‘Spread Risk Analysis’ section remains largely the same with some clarifying changes to language included.<sup>46</sup>

ICC proposes to describe the implementation of the Monte Carlo-based methodology in the new ‘Multivariate Statistical Approach via Copulas’ subsection. ICC proposes to include a discussion on the construction and application of the standard tools in modeling dependence, including the review of their theoretical background, in the new ‘Copulas’ subsection.<sup>47</sup>

ICC proposes the new ‘Tail Dependence’ subsection to provide a description of the concept of tail dependence, given its relevancy as it indicates the probability of extreme values occurring jointly.<sup>48</sup> The proposed subsection would provide additional

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<sup>43</sup> Notice, 83 FR at 35034–35.

<sup>44</sup> Notice, 83 FR at 35035.

<sup>45</sup> Id.

<sup>46</sup> Id.

<sup>47</sup> Id.

<sup>48</sup> Id.

support behind ICC’s conclusion that the tools for modeling dependence would be particularly suitable for connecting the various univariate distributions in a multivariate setting as they provide flexibility in modeling tail dependence.<sup>49</sup>

In the proposed ‘Copula Simulation’ subsection, ICC would describe its Monte Carlo-based simulation approach.<sup>50</sup> The proposed approach is based on first generating for all SN RF/RSF and On The Run indices Most Actively Traded Tenor (“MATT”) scenarios using the stochastic representation of the selected multivariate distribution under consideration.<sup>51</sup> The conditional simulation approach would then be utilized to generate individual RF/tenor-specific scenarios.<sup>52</sup> ICC also proposes to describe the block simulation approach that it would utilize in generating scenarios, which departs from an approach where all tenors for all SNs are simulated together. Instead, specific blocks of the correlation matrix would be considered through the stepwise block simulation approach.<sup>53</sup>

ICC would discuss the estimation of a new parameter in the proposed ‘Copula Parameter Estimation’ subsection.<sup>54</sup> The new subsection would include a description of two methods that can be used for parameter estimation, namely the “quasi Maximum

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<sup>49</sup> Id.

<sup>50</sup> Id.

<sup>51</sup> Id.

<sup>52</sup> Id.

<sup>53</sup> Id.

<sup>54</sup> Id.

Likelihood” approach and the “Canonical Maximum Likelihood” method.<sup>55</sup> ICC proposes to set the value at which this parameter is set conservatively and to explain that the value reflects strong tail dependence within the simulation framework, which is important because ICC estimates that tail dependence would increase in stressed market conditions.<sup>56</sup>

Sixth, ICC proposes certain amendments to the ‘RR Risk Analysis’ section to remove details regarding the current stress-based approach for the RR-sensitivity-response component and to describe how ICC jointly simulates credit spread and RR scenarios using Monte Carlo techniques.<sup>57</sup> As discussed above, under the current stress-based approach, the RR-sensitivity-response component is computed in terms of RR stress scenarios and incorporates potential losses associated with changes in the market implied RR.<sup>58</sup> The proposed Monte Carlo-based methodology would consider the risk arising from fluctuations in the market implied RRs of each SN RF and/or RSF jointly with the fluctuations in the curves of credit spreads.<sup>59</sup>

The proposed ‘Distribution of RRs’ subsection would contain much of the relevant analysis under the current ‘RR Sensitivity Risk Analysis’ section because the univariate RR distribution assumptions would not change under the Monte Carlo-based methodology. ICC proposes some additional clarifying language to further specify that

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<sup>55</sup> Id.

<sup>56</sup> Id.

<sup>57</sup> Id.

<sup>58</sup> Id.

<sup>59</sup> Id.

the RR stress-based sensitivity requirement transitioned to a Monte Carlo simulation-based methodology.<sup>60</sup> Specifically, ICC proposes to note the assumption regarding the analysis of each SN RF/RSF that includes the description located under the current ‘Beta Distribution’ subsection as the integrated spread response also assumes a Beta distribution describing the behavior of the RRs.<sup>61</sup>

The amended ‘Parameter Estimation’ subsection would discuss the parameter calibration necessary to simulate RR scenarios and is largely the same.<sup>62</sup> The proposed revisions would remove or replace terminology associated with the stress-based approach with terminology associated with the Monte Carlo-based approach.<sup>63</sup>

The proposed ‘Spread-Recovery-Rate Bivariate Model’ subsection would describe the use of credit spread and RR distributions to jointly simulate scenarios to estimate portfolio risk measures under the Monte Carlo-based methodology.<sup>64</sup> Namely, ICC proposes to discuss the use of the conditional simulation approach to jointly simulate SN RF/RSF-specific RR scenarios with SN RF/RSF MATT spread log-return scenarios.<sup>65</sup> ICC proposes to note several assumptions under this model, along with an explanation of

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<sup>60</sup> Id.

<sup>61</sup> Id.

<sup>62</sup> Id.

<sup>63</sup> Id.

<sup>64</sup> Id.

<sup>65</sup> Id.

how it generates the individual SN RF/RSF-specific RR scenarios and the tenor-specific spread scenarios using copulas.<sup>66</sup>

ICC proposes moving the ‘Arbitrage-Free Modeling’ subsection, which is currently located in the ‘Spread Risk Analysis’ section, to the ‘Spread and RR Risk Analysis’ section.<sup>67</sup> The analysis would remain largely the same with some language clarifications, including references to simulated spread levels in conjunction with simulated RR levels within the text and within formulas to ensure consistency with the proposed ‘Spread and RR Risk Analysis’ section.<sup>68</sup> ICC proposes further revisions to terminology, such as removing terminology associated with the stress-based approach and incorporating the Monte Carlo simulation based methodology described above to ensure consistency with the proposed ‘Spread and RR Risk Analysis’ section.<sup>69</sup> ICC also proposes replacing specific references to the current most actively traded tenor with references to the more general concept of “most actively traded tenor” to account for a situation in which the referenced most actively traded tenor is different.<sup>70</sup>

Seventh, in the proposed ‘Risk Estimations’ subsection, ICC would describe the computation of the integrated spread-response component.<sup>71</sup> Once the Monte Carlo scenarios would be simulated, all instruments would be repriced, and the respective

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<sup>66</sup> Id.

<sup>67</sup> Id.

<sup>68</sup> Id.

<sup>69</sup> Id.

<sup>70</sup> Id.

<sup>71</sup> Id.

instrument P/L responses would be computed.<sup>72</sup> Upon consideration of the instrument positions in each portfolio along with the instrument P/L responses, portfolio risk estimations would be performed and the integrated spread-response component would be established.<sup>73</sup>

ICC proposes to discuss its calculation of P/Ls for instruments, RFs, common currency sub-portfolios, and multi-currency sub-portfolios under the new ‘RF and Sub-Portfolio Level Integrated Spread Response’ subsection.<sup>74</sup> ICC proposes to retain the use of sub-portfolios as is currently done today.<sup>75</sup> However, the portfolio benefits across sub-portfolios would be limited.<sup>76</sup> This enhancement would allow ICC to decompose portfolio level P/L at the sub-portfolio level and to estimate sub-portfolio level risk measures.<sup>77</sup>

In the proposed ‘Instrument P/L Estimations’ subsection, ICC would describe the calculation of instrument P/Ls. Namely, ICC would reprice all instruments at the hypothetical spread and RR levels, which would be derived from the simulated spread and RR scenarios, and take the difference between the prices of the instruments at the simulated scenarios and the current end-of-day (“EOD”) prices.<sup>78</sup> ICC would utilize the

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<sup>72</sup> Id.

<sup>73</sup> Id.

<sup>74</sup> Id.

<sup>75</sup> Id.

<sup>76</sup> Id.

<sup>77</sup> Id.

<sup>78</sup> Notice, 83 FR at 35035–36.

instrument-related P/L distribution to estimate the instrument-specific integrated spread response as the 99.5% VaR measure in the currency of the instrument.<sup>79</sup>

ICC would describe the calculation of RF P/Ls in the proposed ‘RF P/L Estimations’ subsection.<sup>80</sup> ICC would utilize the simulated P/L scenarios, combined with the post-index-decomposition positions related to a given RF, to generate a currency-specific RF P/L distribution.<sup>81</sup> ICC would utilize this RF-related P/L distribution to estimate the RF-specific integrated spread response as the 99.5% VaR measure in the currency of the considered RF.<sup>82</sup>

In the proposed ‘Common Currency Sub-Portfolio P/L Estimations’ subsection, ICC would describe the calculation of common currency sub-portfolio P/Ls.<sup>83</sup> For a currency specific sub-portfolio, ICC would extract the relevant risk measures from sub-portfolio level P/L distributions, which would be obtained from the aggregation of common currency RF P/L distributions.<sup>84</sup>

In the proposed ‘Multi-Currency Sub-Portfolio P/L Estimations’ subsection, ICC would add clarifying language describing the calculation of multi-currency sub-portfolio P/Ls. ICC proposes to extend multi-currency portfolio benefits to RFs with similar market characteristics, where the RFs and their respective instruments would be

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<sup>79</sup> Notice, 83 FR at 35036.

<sup>80</sup> Id.

<sup>81</sup> Id.

<sup>82</sup> Id.

<sup>83</sup> Id.

<sup>84</sup> Id.

denominated in different currencies.<sup>85</sup> Under the proposed approach, long-short integrated spread response benefits would be provided between Corporate RFs that are denominated in different currencies.<sup>86</sup> ICC proposes to retain the multi-currency risk aggregation approach, which involves obtaining U.S. Dollar (“USD”) and Euro (“EUR”) denominated sub-portfolio P/L distributions, to RFs within the North American Corporate and European Corporate sub-portfolios denominated in USD and EUR, respectively.<sup>87</sup>

ICC proposes to include its calculation for the portfolio level integrated spread-response component in the ‘Portfolio level Integrated Spread Response’ subsection.<sup>88</sup> The calculation would include the sub-portfolio-specific integrated spread response after any potential multicurrency benefits and the RF-specific integrated spread response.<sup>89</sup> ICC proposes the new ‘RF Attributed Integrated Spread Response Requirements’ subsection to describe the calculation of the RF attributed integrated spread-response component for each RF in the considered portfolio.<sup>90</sup>

ICC proposes minor revisions to the ‘Anti-Procyclicality Measures’ subsection to replace terminology associated with the stress-based approach with terminology

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<sup>85</sup> Id.

<sup>86</sup> Id.

<sup>87</sup> Id.

<sup>88</sup> Id.

<sup>89</sup> Id.

<sup>90</sup> Id.



associated with the Monte Carlo-based approach.<sup>91</sup> ICC also proposes to update calculation descriptions relating to portfolio responses to note that certain amounts would be converted to or represented in USD using the EOD established foreign exchange (“FX”) rate.<sup>92</sup>

Eighth, ICC proposes updates to the ‘Multi-Currency Portfolio Treatment’ section to incorporate the proposed integrated spread-response component.<sup>93</sup> ICC proposes to clarify that it implements a multi-currency portfolio treatment methodology for portfolios with instruments that are denominated in different currencies.<sup>94</sup> The proposed changes would also remove references to the current spread-response component.<sup>95</sup>

Finally, ICC also proposes minor edits to the ‘Portfolio Loss Boundary Condition’ section to remove or replace references to the current spread-response and RR-sensitivity-response components with references to the proposed integrated spread-response component within the text and within formulas to ensure consistency with the proposed ‘Spread and RR Risk Analysis’ section, specifically the ‘Portfolio Level Integrated SR’ subsection.<sup>96</sup> Moreover, ICC proposes to reference, for clarity, the total number of RFs within the considered sub-portfolio in its calculations of the maximum portfolio loss and the maximum portfolio integrated spread response to ensure

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<sup>91</sup> Id.

<sup>92</sup> Id.

<sup>93</sup> Id.

<sup>94</sup> Id.

<sup>95</sup> Id.

<sup>96</sup> Id.

consistency with the proposed ‘Spread and RR Risk Analysis’ section, specifically the ‘Portfolio Level Integrated SR’ subsection.<sup>97</sup>

***Other Revisions to the Risk Management Model Description Document***

ICC proposes minor changes to the ‘Guaranty Fund (“GF”) Methodology’ section of the Risk Management Model Description Document.<sup>98</sup> The proposed changes would move the descriptions associated with the credit spread curve shape scenarios (i.e., Uniform Scaling, Pivoting, and Tenor Specific) from the current ‘Spread Risk Analysis’ section to the ‘Unconditional Uncollateralized Exposures’ subsection.<sup>99</sup> Although the credit spread curve shape scenarios are currently considered as part of the spread-response component, ICC proposes to only use them for GF purposes.<sup>100</sup> The descriptions and calculations associated with the credit spread curve shape scenarios would remain largely the same with some clarifying changes, including the substitution of a variable for the simulation quantile in the calculations to reflect consistency with the GF risk measure, and structural changes to the descriptions to enhance readability.<sup>101</sup> Additionally, the proposed changes would include reference to the integrated spread response in place of the spread response in the calculations describing the GF stress spread response.

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<sup>97</sup> Id.

<sup>98</sup> Id.

<sup>99</sup> Id.

<sup>100</sup> Id.

<sup>101</sup> Id.

ICC also proposes other non-material changes to the Risk Management Model Description Document, including minor grammatical, typographical, and structural changes to enhance readability and minor updates to calculations to update symbol notations.<sup>102</sup>

### ***Risk Management Framework***

ICC proposes conforming revisions to its Risk Management Framework to reflect the transition to a Monte Carlo-based methodology for the spread response and RR-sensitivity-response components of the initial margin model.<sup>103</sup> The proposed revisions are described in detail as follows.

ICC proposes changes to the ‘Waterfall Level 2: Initial Margin’ section to combine the spread response and the RR sensitivity components into the proposed integrated spread-response component.<sup>104</sup> The proposed revisions would introduce the integrated spread-response component under the amended ‘Integrated Spread Response Requirements’ section and replace all references to the spread response with references to the integrated spread response.<sup>105</sup> ICC proposes conforming changes throughout the framework.<sup>106</sup> Currently, the spread-response component is obtained by estimating scenario P/L for a set of hypothetical “tightening” and “widening” credit spread scenarios

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<sup>102</sup> Id.

<sup>103</sup> Id.

<sup>104</sup> Id.

<sup>105</sup> Id.

<sup>106</sup> Id.

and by considering the largest loss.<sup>107</sup> Under the proposed revisions, the integrated spread response would be computed by creating P/L distributions from a set of jointly-simulated hypothetical (forward looking) credit spread and RR scenarios.<sup>108</sup> The proposed changes would provide an updated calculation of the instrument scenario P/L, note the mappings between spread and RR levels and prices are performed by means of the International Swap and Derivatives Association (“ISDA”) standard conversion convention, and specify that the hypothetical prices are forward looking.<sup>109</sup> ICC also proposes to state that the integrated spread response approach would assume a distribution that would describe the behavior of the RRs.<sup>110</sup>

ICC proposes the new ‘Index Decomposition Approach’ subsection, which would contain the analysis under the current ‘Index Decomposition Benefits between Index RFs and SN RSFs’ subsection without any material changes.<sup>111</sup> ICC also proposes the new ‘Portfolio Approach’ subsection to describe the Monte Carlo simulation framework, which would replace the current stress-based approach noted above.<sup>112</sup> ICC proposes to utilize Monte Carlo techniques to generate spread and RR scenarios.<sup>113</sup> ICC would utilize the simulated scenarios to derive the hypothetical spread and RR levels, at which

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<sup>107</sup> Id.

<sup>108</sup> Id.

<sup>109</sup> Id.

<sup>110</sup> Id.

<sup>111</sup> Notice, 83 FR at 35036–37.

<sup>112</sup> Notice, 83 FR at 35037.

<sup>113</sup> Id.

each instrument is repriced in order to generate a scenario instrument P/L based on post-index-decomposition positions.<sup>114</sup> For each scenario, instrument P/Ls would be aggregated to obtain RF and sub-portfolio P/Ls, which represent the RF and sub-portfolio P/L distributions that would be used to estimate the RF and sub-portfolio 99.5% VaR measures at a risk horizon that is at least 5 days.<sup>115</sup> The portfolio level integrated spread response would be estimated as a weighted sum of RF and sub-portfolio 99.5% VaR measures.<sup>116</sup> ICC also proposes to move its analysis related to achieving anti-procyclicality to the amended 'Integrated Spread Response Requirements' section without any material changes.<sup>117</sup>

#### ***Notice of Filing of Amendment No. 1***

ICC submitted Amendment No. 1 to provide Commission with additional details and analyses surrounding ICC's proposed transition to a Monte Carlo-based methodology for certain components of the initial margin model. Amendment No. 1 included additional information, which was submitted as Exhibit 3, related to the Filing. Exhibit 3 contains a correlation sensitivity analysis on portfolios using the proposed Monte Carlo-based methodology for the first half of 2018 and a back-testing analysis of the IM components of the proposed Monte Carlo-based methodology spanning 2015 through 2018 and including periods of stressed market conditions.

#### **II. Discussion and Commission Findings**

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<sup>114</sup> Id.

<sup>115</sup> Id.

<sup>116</sup> Id.

<sup>117</sup> Id.

Section 19(b)(2)(C) of the Act directs the Commission to approve a proposed rule change of a self-regulatory organization if it finds that such proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to such organization.<sup>118</sup> For the reasons given below, the Commission finds that the proposal is consistent with Section 17A(b)(3)(F) of the Act<sup>119</sup> and Rule 17Ad-22(b)(2) thereunder.<sup>120</sup>

A. Consistency with Section 17A(b)(3)(F) of the Act

Section 17A(b)(3)(F) of the Act<sup>121</sup> requires, among other things, that the rules of ICC be designed to promote the prompt and accurate clearance and settlement of securities transactions, and to the extent applicable, derivative agreements, contracts and transactions; to assure the safeguarding of securities and funds which are in the custody or control of ICC or for which it is responsible; and to comply with the provisions of the Act and the rules and regulations thereunder.

As described above, the Proposed Rule Change would make a variety of changes to ICC's initial margin model, and the documentation thereof, to transition ICC from the current stress-based approach to a Monte Carlo-based methodology for the spread-response and recovery-rate-sensitivity-response components of the model. The current approach faces certain limitations, in that it produces a limited number of stress scenarios

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<sup>118</sup> 15 U.S.C. 78s(b)(2)(C).

<sup>119</sup> 15 U.S.C. 78q-1(b)(3)(F).

<sup>120</sup> 17 CFR 240.17Ad-22(b)(2).

<sup>121</sup> 15 U.S.C. 78q-1(b)(3)(F).

that may not capture the risk of portfolios with more complex, non-linear instruments, and that it does not provide for a consistent estimation of the portfolio level spread response based on a defined risk measure (e.g., Value-at-Risk) and quantile (e.g., 99%). The methodology reflected in the Proposed Rule Change is designed to address these limitations. Specifically, the Monte Carlo-based methodology should help ICC to consider a large set of scenarios to more appropriately capture portfolio risk, including the risk of more complex, non-linear instruments, and produce consistent quantile-based portfolio risk measures.

Thus, the Commission believes that the proposed Monte Carlo-based methodology should enhance ICC's initial margin model by improving its ability to determine the amount of initial margin that ICC should collect and, therefore, to manage financial risk exposures that may arise in the course of its ongoing clearance and settlement activities. The Commission also believes that the improved ability to determine initial margin should better allow ICC to complete the clearance and settlement process in the event of a member default. For these reasons, the Commission believes that Proposed Rule Change should help promote the prompt and accurate clearance and settlement of securities transactions, derivative agreements, contracts, and transactions. Similarly, the Proposed Rule Change should enhance ICC's ability to help assure the safeguarding of securities and funds which are in the custody or control of ICC or for which it is responsible because the enhanced initial margin model should better allow ICC to determine the amount of initial margin it needs to collect and hold to address potential loss exposures. Finally, for both of these reasons, the Commission believes the Proposed Rule Change should, in general, protect investors and the public interest.

B. Consistency with Rule 17Ad-22(b)(2)

Rule 17Ad-22(b)(2) requires that ICC establish, implement, maintain and enforce written policies and procedures reasonably designed to use margin requirements to limit its credit exposures to participants under normal market conditions and use risk-based models and parameters to set margin requirements and review such margin requirements and the related risk-based models and parameters at least monthly.<sup>122</sup>

As described above, the Proposed Rule Change would transition ICC to a Monte Carlo-based methodology for the spread-response and recovery-rate-sensitivity-response components of the initial margin model. The Commission believes that the Proposed Rule Change should enhance ICC's ability to establish margin requirements that are better able to capture portfolio risk, including the risk of more complex, non-linear instruments, and ensure that ICC establishes margin requirements that are commensurate with the risks and characteristics of each portfolio. Taken together, the Commission believes that these aspects of the Proposed Rule Change should improve ICC's use of risk-based models and parameters to set margin requirements, which, in turn, should improve ICC's use of margin requirements to limit its credit exposures to participants under normal market conditions.

The Proposed Rule Change includes numerous changes to the descriptions of ICC's initial margin methodology in its Risk Management Model Description and its Risk Management Framework to reflect this transition to the proposed methodology. The Commission therefore believes that the proposed rule change should help ICC establish

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<sup>122</sup> 17 CFR 240.17Ad-22(b)(2).



written procedures reasonably designed to use risk-based models and parameters to set margin requirements.

Therefore, for the above reasons the Commission finds that the Proposed Rule Change is consistent with Rule 17Ad-22(b)(2).<sup>123</sup>

### III. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether Amendment No. 1 is consistent with the Act. Comments may be submitted by any of the following methods:

#### Electronic Comments:

- Use the Commission's Internet comment form (<http://www.sec.gov/rules/sro.shtml>); or
- Send an e-mail to [rule-comments@sec.gov](mailto:rule-comments@sec.gov). Please include File Number SR-ICC-2018-008 on the subject line.

#### Paper Comments:

Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street, NE, Washington, DC 20549-1090.

All submissions should refer to File Number SR-ICC-2018-008. This file number should be included on the subject line if e-mail is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet website (<http://www.sec.gov/rules/sro.shtml>). Copies of the submission, all subsequent

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<sup>123</sup> Id.

amendments, all written statements with respect to the proposed rule change, security-based swap submission, or advance notice that are filed with the Commission, and all written communications relating to the proposed rule change, security-based swap submission, or advance notice between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street, NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies the filing also will be available for inspection and copying at the principal office of ICE Clear Credit and on ICE Clear Credit's website at <https://www.theice.com/clear-credit/regulation>. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR-ICC-2018-008 and should be submitted on or before [insert date 21 days from publication in the Federal Register].

#### IV. Accelerated Approval of the Proposed Rule Change

The Commission finds good cause, pursuant to Section 19(b)(2) of the Act,<sup>124</sup> to approve the Proposed Rule Change prior to the 30th day after the date of publication of Amendment No. 1 in the Federal Register. As discussed above, Amendment No. 1 provides additional details and analyses surrounding ICC's proposed transition to a Monte Carlo-based methodology for certain components of the initial margin model.

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<sup>124</sup> 15 U.S.C. 78s(b)(2).

By providing the additional information, Amendment No. 1 provides for a more clear and comprehensive understanding of the estimated impact of the Proposed Rule Change, which helps to improve the Commission's review of the Proposed Rule Change for consistency with the Act. Specifically, the information helps to ensure that ICC's risk management system appropriately and effectively addresses the risks associated with clearing security based swap-related portfolios by providing an estimated impact of the proposed Monte Carlo-based methodology.

For similar reasons as discussed above, the Commission finds that Amendment No. 1 is designed to help assure the safeguarding of securities and funds which are in the custody or control of ICC, consistent with Section 17A(b)(3)(F) of the Act.<sup>125</sup> Accordingly, the Commission finds good cause for approving the Proposed Rule Change, as modified by Amendment No. 1, on an accelerated basis, pursuant to Section 19(b)(2) of the Exchange Act.<sup>126</sup>

#### V. Conclusion

On the basis of the foregoing, the Commission finds that the proposal is consistent with the requirements of the Act, and in particular, with the requirements of Section 17A(b)(3)(F) of the Act<sup>127</sup> and Rule 17Ad-22(b)(2) thereunder.<sup>128</sup>

IT IS THEREFORE ORDERED pursuant to Section 19(b)(2) of the Act<sup>129</sup> that

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<sup>125</sup> 15 U.S.C. 78q-1(b)(3)(F).

<sup>126</sup> 15 U.S.C. 78s(b)(2).

<sup>127</sup> 15 U.S.C. 78q-1(b)(3)(F).

<sup>128</sup> 17 CFR 240.17Ad-22(b)(2).

<sup>129</sup> 15 U.S.C. 78s(b)(2).



the proposed rule change, as modified by Amendment No. 1, (SR-ICC-2018-008) be, and hereby is, approved on an accelerated basis.<sup>130</sup>

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.<sup>131</sup>

**Eduardo A. Aleman,**  
*Assistant Secretary.*

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<sup>130</sup> In approving the proposed rule change, the Commission considered the proposal's impact on efficiency, competition, and capital formation. 15 U.S.C. 78c(f).

<sup>131</sup> 17 CFR 200.30-3(a)(12).

